

REMARKS

This Amendment is in response to the Final Office Action mailed March 15, 2007. The Examiner set a shortened statutory period for reply of three (3) months, making the present Amendment due by June 15, 2007.

This amendment accompanies a Request for Continued Examination under 37 C.F.R. § 1.114, and fee under 37 C.F.R. § 1.17(e). The Examiner is thereby requested to withdraw the finality of the outstanding office action.

In the present paper, claims 23-29 are added and claims 4 and 7-13 are canceled. Claims 1-3, 5 and 6 were canceled in previous papers. Claims 14-22 are withdrawn from consideration. Claims 23-29 are now presented for the Examiner's consideration.

In the final official action, the claims were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,632,964 to Ishii et al. ("Ishii") in view of U.S. Patent No. 6,749,819 to Otsuka et al. ("Otsuka").

New Claims 23-28

As previously noted by Applicants, Ishii discloses heating the cleaning agent 4 and the ammonia decomposition catalyst 8 to incompatible temperatures. The cleaning agent 4 is heated to a temperature of preferably 100°C or lower, while the ammonia decomposition is performed at a temperature from 450 to 1000°C, preferably from 600 to 900°C.

In the Final Official Action, the Examiner argues that:

... considerations such as insulation and heating necessary to accommodate the conditions necessitated by the reaction conditions of the separate compartments fall under the purview of routine experimentation. Additionally, one of ordinary skill would recognize that benefits such as economy of scale would result from the combination of two separate chambers into a single chamber comprising two compartments and this motivation would lead to the currently claimed invention.

While it is acknowledged that the skilled person could provide these two materials in a single chamber, the substantial difference in the temperature to which these materials are required to be heated during use (which may be greater than 900°C given the temperature ranges disclosed in Ishii) would present the skilled person with significant problems in connection with

the thermal insulation of the cleaning agent from the catalyst. In view of this, it is submitted that the skilled person would not seek to locate these two materials in a common chamber, and that new claim 23 is therefore patentable over the references cited by the Examiner.

A distinguishing feature of the present invention is the use of thermally compatible materials within the chamber to (i) heat the gas stream (this is the purpose of the heated metal), (ii) decompose the metalorganic vapour (this is the purpose of the heated metal oxide), and (iii) decompose ammonia (this is purpose of the nickel-coated ceramic). Consequently, a single furnace may be used to heat the materials located within the chamber to a common temperature (in the range from 200 to 700°C) without the need to provide any thermal insulation between the different materials.

For example, new claim 23 requires the step of:

providing a chamber comprising a first zone containing a bed of metal and a bed of metal oxide;

and further requires:

conveying the exhaust gas through the first zone of the chamber to expose the exhaust gas to the heated bed of metal to heat the exhaust gas, and to subsequently expose the exhaust gas to the heated bed of metal oxide to cause the metalorganic vapour to decompose.

There is no teaching or suggestion in either of the references combined by the Examiner to provide a heating bed and a metalorganic vapour decomposing bed in the first zone, or to convey the exhaust gas sequentially through those beds. Ishii, the only reference teaching metalorganic vapour decomposition, teaches a single "cleaning agent A" comprising a single bed of soda lime covered with powder of copper oxide (col. 3, line 27 – col. 4, line 12).

In view of this, it is further submitted that claim 23 contains elements not taught or suggested by any art of record, and that the claims are patentable for that additional reason.

Conclusion

Applicants therefore assert that pending claims 23-29 are in condition for allowance, and earnestly request that the Examiner issue a Notice of Allowance.

Should the Examiner have any questions regarding the present case, the Examiner should not hesitate in contacting the undersigned at the number provided below.

Respectfully submitted,



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